

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-36. (Cancelled)

Claim 37. (Original) A method of manufacturing a semiconductor device, comprising the steps of:

forming a crystalline semiconductor film over an insulating surface; and
adding impurity elements that shifts an energy band of said crystalline semiconductor film to a portion of said crystalline semiconductor film which will come to an active region later to locally form an impurity region;
wherein said impurity region is formed so as to be discontinuous on a joint portion between the active region and a drain region.

Claim 38. (Original) A method according to claim 37, wherein said crystalline semiconductor film forming step comprises the steps of:

forming an amorphous semiconductor film over said insulating surface;
holding catalytic elements that promote the crystallization of said amorphous semiconductor film on said amorphous semiconductor film;
crystallizing said amorphous semiconductor film through a heat treatment to transform said amorphous semiconductor film into a crystalline semiconductor film; and
gettering said catalytic elements remaining in said crystalline semiconductor film to a processing atmosphere through a heat treatment in an atmosphere containing halogen elements therein.

Claim 39. (Original) A method according to claim 37, wherein said crystalline semiconductor film forming step comprises the steps of:

forming an amorphous semiconductor film on an insulating surface;

holding catalytic elements that promote the crystallization of said amorphous semiconductor film on said amorphous semiconductor film;

crystallizing said amorphous semiconductor film through a heat treatment to transform said amorphous semiconductor film into a crystalline semiconductor film; and

introducing elements selected from the group XV into a predetermined region of said crystalline semiconductor film; and

gettering said catalytic elements in said crystalline semiconductor film into which said elements selected from the group XV through a heat treatment.

Claim 40. (Original) A method according to claim 37, wherein elements selected from the group XIII are added to said impurity region with the concentration of 1×10^{17} to 1×10^{20} atoms/cm³.

Claim 41. (Original) A method according to claim 40, wherein the elements selected from the group XIII comprise one of boron and indium.

Claim 42. (Original) A method according to claim 37, wherein elements selected from the group XV are added to said impurity region with the concentration of 1×10^{17} to 1×10^{20} atoms/cm³.

Claim 43. (Original) A method according to claim 42, wherein the elements selected from the group XV comprise one of phosphorous, arsenic and antimony.

Claim 44. (Original) A method according to claim 37, wherein said crystalline semiconductor film has a polycrystalline structure or a substantially monocrystalline structure.

Claim 45. (Original) A method according to claim 44, wherein a main orientation face of said crystalline semiconductor film having a substantially monocrystalline structure is a {110} face.

Claim 46. (Original) A method according to claim 37, wherein said crystalline semiconductor film is obtained by crystallizing an amorphous semiconductor film.

Claim 47. (Original) A method according to claim 38, wherein said catalytic elements are one or plural kinds of elements selected from the group consisting of Ni, Co, Fe, Pd, Pt, Cu, Au, Ge, Pb and In.

Claim 48. (Original) A method according to claim 37, wherein said impurity region is formed through the ion implanting method.

Claim 49. (Original) A method of manufacturing a semiconductor device, comprising the steps of:

forming a crystalline semiconductor film over an insulating surface; and
adding impurity elements that shifts an energy band of said crystalline semiconductor film to a portion of said crystalline semiconductor film which will come to an active region later to locally form an impurity region;

wherein said active region is divided into a plurality of channel forming regions by said impurity region.

Claim 50. (Original) A method according to claim 49, wherein said crystalline semiconductor film forming step comprises the steps of:

forming an amorphous semiconductor film over said insulating surface;
holding catalytic elements that promote the crystallization of said amorphous semiconductor film on said amorphous semiconductor film;
crystallizing said amorphous semiconductor film through a heat treatment to transform said amorphous semiconductor film into a crystalline semiconductor film; and

gettering said catalytic elements remaining in said crystalline semiconductor film to a processing atmosphere through a heat treatment in an atmosphere containing halogen elements therein.

Claim 51. (Original) A method according to claim 49, wherein said crystalline semiconductor film forming step comprises the steps of:

forming an amorphous semiconductor film on an insulating surface;

holding catalytic elements that promote the crystallization of said amorphous semiconductor film on said amorphous semiconductor film;

crystallizing said amorphous semiconductor film through a heat treatment to transform said amorphous semiconductor film into a crystalline semiconductor film; and

introducing elements selected from the group XV into a predetermined region of said crystalline semiconductor film; and

gettering said catalytic elements in said crystalline semiconductor film into which said elements selected from the group XV through a heat treatment.

Claim 52. (Original) A method according to claim 49, wherein elements selected from the group XIII are added to said impurity region with the concentration of 1×10^{17} to 1×10^{20} atoms/cm³.

Claim 53. (Original) A method according to claim 52, wherein the elements selected from the group XIII comprise one of boron and indium.

Claim 54. (Original) A method according to claim 49, wherein elements selected from the group XV are added to said impurity region with the concentration of 1×10^{17} to 1×10^{20} atoms/cm³.

Claim 55. (Original) A method according to claim 54, wherein the elements selected from the group XV comprise one of phosphorous, arsenic and antimony.

Claim 56. (Original) A method according to claim 49, wherein said crystalline semiconductor film has a polycrystalline structure or a substantially monocrystalline structure.

Claim 57. (Original) A method according to claim 56, wherein a main orientation face of said crystalline semiconductor film having a substantially monocrystalline structure is a {110} face.

Claim 58. (Original) A method according to claim 49, wherein said crystalline semiconductor film is obtained by crystallizing an amorphous semiconductor film.

Claim 59. (Original) A method according to claim 50, wherein said catalytic elements are one or plural kinds of elements selected from the group consisting of Ni, Co, Fe, Pd, Pt, Cu, Au, Ge, Pb and In.

Claim 60. (Original) A method according to claim 49, wherein said impurity region is formed through the ion implanting method.